

Amendments to the Drawings:

The attached sheets of drawings include attached replacement sheets for Figures 1 – 19. The attached replacement sheets are formal versions of the originally filed Figures 1 – 19 and do not contain any new matter.

When preparing the replacement sheets of drawings, the applicant discovered minor errors in four of the drawings sheets: Fig. 12, Fig. 14, Fig. 18, and Fig. 19. Each of these drawing sheets were missing one or two reference numerals. Reference numeral 398 has been added to Figure 12. Reference numerals 487 and 484 have been added to Figure 14. Reference numeral 116 has been added to Figure 18. Reference numerals 495 and 496 have been added to Figure 19.

Additionally, the applicant has discovered a minor error in the specification and drawings: the reference number 499 has been used once in Figure 4 and once in Figure 9 to refer to different elements. The applicant has amended Figure 9 such that the number 499 has been changed to 498. The specification has been amended accordingly, as described elsewhere in this communication.

The applicant has discovered minor errors in Figure 11: the reference number 292 as recited at page 18, line 7 of the specification as “path 292” is missing. The applicant has amended Figure 11 by adding the reference number 292, and its lead line.

The applicant has discovered a minor error in Figure 9: the reference number 316 as recited at page 18, line 7 of the specification as “bearing 316” is

missing. The applicant has amended Figure 9 by adding the reference number 316 and its lead line.

Additionally, the applicant has discovered a minor error in the specification and drawings: the reference number 158 has been used once in Figures 6 and 11 and once in Figures 8 and 9 to refer to different elements. The applicant has amended Figures 6 and 11 such that the number 158 has been changed to 145. The specification has been amended accordingly, as described elsewhere in this communication.

The applicant is also submitting a separate file via EFS-Web named 20080201_10-824724_marked-up_drawings. This file has marked up copies of each of the respective amended Figs. 9, 11, 12, 14, 18, and 19 labeled "ANNOTATED SHEET SHOWING CHANGES."

REMARKS/ARGUMENTS

Reconsideration of this application, as amended, is respectfully requested.

Regarding the Specification

The Examiner has made four objections to the specification. The applicant has amended his specification at pages 2 – 3 of this Amendment to address these objections, listing the respective amendments as item numbers 1 – 3.

The Examiner has objected to the specification, indicating that on page 7, line 6, there is no Figure 2A in the drawings. On page 2 of this Amendment, in item 1, the applicant has submitted a replacement for paragraph 3 on page 7, amended to read “Figure 2” instead of “Figure 2A.” (The “A” has been double bracketed in the replacement paragraph to indicate a deletion of it.) It is respectfully submitted that with this amendment, this objection to the specification has been obviated.

The Examiner has objected to the specification, indicating that on page 12, line 3, a period should be inserted following “216.” On page 2 of this Amendment, in item 2, the applicant has submitted a replacement for paragraph 1 on page 12, amended such that a period and two spaces follow the numeral 216. It is respectfully submitted that with this amendment, this objection to the specification has been obviated.

The Examiner has objected to the specification, indicating in regard to page 22, lines 7 and 8, that an axial fan does not discharge air radially. On page

3 of this Amendment, in item 3, the applicant has submitted a replacement for paragraph 2 on page 22, amended such that the words “an axial type” have been deleted. Paragraph 2 now reads, “...fan 330 is a fan having vanes optimally formed to efficiently draw air along the axis thereof and direct it radially.” It is respectfully submitted that with this amendment, this objection to the specification has been obviated.

The Examiner has objected to the specification as failing to provide proper antecedent basis for the claimed subject matter. More specifically, the Examiner has indicated that there is no basis in the specification for “first passageway” and “second passageway” of claim 4. To address this objection, the applicant has amended claim 4 to read “an upper passageway” and “a lower passageway” instead of first and second passageways. Bases for this amendment may be found at page 20 line 8, and in Figure 9, elements 174 and 176. With this amendment to claim 4, there is no need to amend the specification. It is respectfully submitted that with this amendment of claim 4, this objection to the specification has been obviated.

The applicant has discovered a minor error in the specification and drawings: the reference number 499 has been used once in Figure 4 and once in Figure 9 to refer to different elements. The applicant wishes to amend the specification by submitting the replacement paragraph on page 3 of this Amendment as item 4. In this paragraph, the number 499 has been changed to 498. Figure 9 has been amended accordingly, as described elsewhere in this communication.

The applicant has discovered a minor error in the specification in paragraph 3, page 16. In three instances, element 156 is referred to as "casing 156." Each of these should read "cavity 156," as in the preceding two paragraphs. The applicant wishes to amend the specification by submitting the replacement paragraph on page 4 of this Amendment as item 5, in which the word "casing" has been replaced with the word "cavity" in each of the three instances.

The applicant has further amended the specification on page 4 of this Amendment in item 6, indicating that the threaded fasteners originally indicated as "not shown" are fasteners 495 and 496 of Figure 19. Figure 19 has been amended to show reference numerals 495 and 496 as indicated previously on page 14 of this communication.

The applicant has discovered a minor error in the specification and drawings: the reference number 158 has been used once in Figures 6 and 11 and once in Figures 8 and 9 to refer to different elements. The applicant wishes to amend the specification by submitting the replacement paragraph on page 5 of this Amendment as item 7. In this paragraph, the number 158 has been changed to 145. Figures 6 and 11 have been amended accordingly, as described on page 15 of this communication.

Regarding the Drawings

The Examiner has objected to the drawings as failing to comply with 37 CFR 1.84 because lines are not uniformly drawn, and certain portions of cross-

sections are not hatched. The applicant is submitting with this amendment replacement sheets for Figures 1 - 19 prepared in accordance with 37 CFR 1.84. The attached replacement sheets are formal versions of the originally filed Figures 1 - 19 and do not contain any new matter. These replacement sheets are being submitted as a separate file named "20080201_10-824724_formal_drawings" via EFS-Web.

Additionally, the applicant has discovered minor errors in the drawings, specifically, Figures 9, 11, 12, 14, 18, and 19. The applicant has amended these drawings as described on pages 14 – 15 of this communication. The applicant is also submitting herewith marked up copies of each of the respective amended Figs. 9, 11, 12, 14, 18, and 19 labeled "ANNOTATED SHEET SHOWING CHANGES." These marked up sheets are being submitted as a separate file named "20080201_10-824724_marked-up_drawings" via EFS-Web.

With the submission of formal drawing replacement sheets 1 – 19 for Figures 1 – 19, and the above amendment of the drawings, it is respectfully submitted that the Examiner's objections to the drawings have been obviated. Acceptance of the drawings is respectfully requested.

Regarding the Claims

The Examiner has rejected claims 3 - 5 under 35 USC 112, as being indefinite for failing to point out and distinctly claim the subject matter which the applicant regards as the invention. The Examiner has indicated that in claim 3, no seal is recited to give meaning to the term "seal flood region;" and in claim 4,

it is not clear what structure forms the first and second passageways, since there is no mention of first and second passageways in the specification; and claim 5, by virtue of depending upon claim 4, is thus also indefinite.

The applicant has amended claim 3 to read, “said annular region comprising a counterbore within which is disposed a seal, and enclosing a seal flood region.” Bases for this amendment may be found at page 18, lines 19 – 20, counterbore 143 and seal 320, and as shown in Figure 9. It is respectfully submitted that the Examiner’s rejection of claim 3 under 35 USC 112 has been obviated.

The applicant has amended claim 4 to read “an upper passageway” and “a lower passageway” instead of first and second passageways. Bases for this amendment may be found at page 20 line 8, and in Figure 9, elements 174 and 176. It is respectfully submitted that the Examiner’s rejection of claim 4 under 35 USC 112 has been obviated. Since claim 5 is dependent upon claim 4, it is further respectfully submitted that the Examiner’s rejection of claim 5 under 35 USC 112 has been obviated.

The Examiner has rejected claims 1, 29, 39, and 45 under 35 USC 102(b), as being anticipated by United States patent 2,312,525 of Curtis. The Examiner has alleged that Curtis discloses an electric motor driven pump having a cover 16 forming a volute chamber 21.

The applicant respectfully traverses the Examiner’s rejection of claims 1, 29, 39, and 45 as being anticipated by Curtis. Turning first to claims 1 and 29,

which are independent claims, both of these claims recite a liquid transfer pump comprising a.) a unitary housing; b.) a motor disposed within a first portion of said housing, said motor including a rotatable drive shaft; and c.) a pump cavity formed in a second portion of said housing, said cavity having an open end and an outlet port. At page 9 of his specification, the applicant discloses at lines 9 – 12 that his transfer pump “comprises a one piece i.e. unitary housing 110,” and that “Housing 110 comprises a first portion 120 that is generally cylindrical and that houses a motor, a second casing portion 150 within which is formed a pump cavity...”

The applicant traverses the Examiner’s rejection of claims 1 and 29 on the grounds that the pump of Curtis does not anticipate the pump inventions recited in these claims. More specifically, the Curtis patent clearly does not teach a pump comprised of a unitary housing. To the contrary, and with reference to Figure 2, at page 2, column 1, lines 62 – 66 a pump casing 17; and at page 2, column 2, lines 43 – 46 a pump housing 17 “terminating in a flared portion 37 forming the head of a prime mover housing 38.” Then at the following lines 44 – 56, Curtis discloses that the motor housing 38 is secured to the pump housing 17 with draw bolt and nut assemblies 38a and 38b, and that the prime mover is preferably an electric motor. Clearly, the pump of Curtis is not comprised of a unitary housing containing both the electric motor and the pump cavity as recited in the applicant’s claims 1 and 29, but rather two separate housings for these purposes, which are fastened together.

It is respectfully submitted that claims 1 and 29 are not anticipated by United States patent 2,312,525 of Curtis and are therefore allowable over this patent. It is further respectfully submitted that claims 39 and 45, being dependent upon claim 29 which is allowable, are also now allowable over the Curtis patent.

The Examiner has rejected claims 16, 23, 24, 29 and 38 under 35 USC 102(b), as being anticipated by United States patent 6,464,471 of Mathis et al. The Examiner has alleged that Mathis et al. disclose "a pump having a motor disposed in a cylindrical housing 68. The housing has an open end with a cover 36 attached thereto. The housing has a first air inlet opening 56 and a first air outlet opening 80."

The applicant respectfully traverses the Examiner's rejection of claims 16, 23, 24, 29 and 38 as being anticipated by Mathis et al. Turning first to claims 16 and 29, which are independent claims, both of these claims recite a liquid transfer pump comprising a unitary housing, a motor disposed within a first portion of the housing, and a pump cavity formed in a second portion of the housing, as described in further detail previously herein. The applicant traverses the Examiner's rejection of claims 16 and 29 on the grounds that the pump of Mathis et al. does not anticipate the pump inventions recited in these claims. More specifically, the Mathis et al. patent does not teach a pump comprised of a unitary housing. To the contrary, and with reference to Figure 6, at column 3, lines 12 – 16 Mathis et al. disclose a motor 26 including a front housing 32 and a

rear housing 34; and at column 3, line 66 – column 4 line 1 that the rear housing 34 includes a near cylindrical outer shell 68. Then at column 5, lines 3 – 5, Mathis et al. disclose a pump chamber 114 defined between the assembled front pump sub-housing 44 and the rear pump sub-housing 42. Clearly, the pump of Mathis et al. is not comprised of a unitary housing containing both the electric motor and the pump cavity as recited in the applicant's claims 16 and 29, but rather multiple housings for these purposes that are fastened together. Additionally, if one were to construe that the housings 32 and 34 are part of the motor 26, then the motor itself is not contained within a housing.

It is respectfully submitted that claims 16 and 29 are not anticipated by United States patent 6,464,471 of Mathis et al. and are therefore allowable over this patent. It is further respectfully submitted that claims 23 and 24, being dependent upon claim 16 which is allowable, and claim 38, being dependent upon claim 29 which is allowable, are also now allowable over the Mathis et al. patent.

The Examiner has rejected claims 16, 23, 24, and 29 under 35 USC 102(b), as being anticipated by United States patent 5,375,651 of Colwell. The Examiner has alleged that Colwell discloses a pump having a motor disposed in a cylindrical housing 11, and that the housing has end covers 12 with air openings 14.

The applicant respectfully traverses the Examiner's rejection of claims 16, 23, 24, and 29 as being anticipated by Colwell. Turning first to claims 16 and 29,

which are independent claims, both of these claims recite a liquid transfer pump comprising a unitary housing, a motor disposed within a first portion of the housing, and a pump cavity formed in a second portion of the housing, as described in further detail previously herein. The applicant traverses the Examiner's rejection of claims 16 and 29 on the grounds that the pump of Colwell does not anticipate the pump inventions recited in these claims. More specifically, the Colwell patent does not teach a pump comprised of a unitary housing. To the contrary, and with reference to Figure 1, at column 2, lines 44 – 46 Colwell discloses a draft inducer blower motor mounting and cooling construction comprising an electric motor 10 having a housing 11. Then at the following lines 52 – 54, Colwell discloses that the shaft 13 of the electric motor is connected to a blower wheel 15 mounted thereon within a housing 16 of a draft inducer. Then at column 3, lines 1 – 5 and lines 22 – 26, Colwell discloses a heat shield 20 that is fastened to housing 16 and partially encloses motor 10. Clearly, the draft inducer or pump of Colwell is not comprised of a unitary housing containing both the electric motor and the pump cavity as recited in the applicant's claims 16 and 29, but rather two separate housings that are fastened together.

It is respectfully submitted that claims 16 and 29 are not anticipated by United States patent 5,375,651 of Colwell and are therefore allowable over this patent. It is further respectfully submitted that claims 23 and 24, being dependent upon claim 16 which is allowable, are also now allowable over the Colwell patent.

The Examiner has rejected claims 2 - 4 under 35 USC 103(a), as being unpatentable over United States patent 4,569,638 of Harker in view of United States patent 2,312,525 of Curtis. The Examiner has alleged that, "Harker et al disclose an electric motor driven pump having a cover 103. However, Harker et al do not disclose that the cover forms a volute chamber. Curtis discloses that it is known to form volute chambers for reducing the flow velocity of the pumped fluid. In view of this teaching, it would have been obvious to form the pump chamber of Harker et al in the form of a volute. Plate 21 of Harker et al is readable as an 'exclusionary plate'."

The applicant respectfully traverses the Examiner's rejection of claims 2 – 4. Firstly, the Examiner's rejection of claims 2 – 4 is traversed on the grounds that neither the Harker reference nor the Curtis reference teach a liquid transfer pump comprising a unitary housing, a motor disposed within a first portion of the housing, and a pump cavity formed in a second portion of the housing, as described in further detail previously herein, and as recited in claim 1, from which claims 2 – 4 depend. In the Harker patent, the housing 1 shown in Figure 1 and described at column 2 line 18 does not include a pump cavity formed in a second portion of the housing, the cavity having an open end and an outlet port; nor a volute chamber having an open end, the volute chamber being formed within the pump cavity. To the contrary, and as disclosed at column 2 lines 55 – 56, the pump of Harker includes a separate pump housing 103 that forms the pump cavity and includes the outlet port. As recited previously herein, the Curtis

reference also does not teach a pump comprising a unitary housing, a motor disposed within a first portion of the housing, and a pump cavity formed in a second portion of the housing.

Thus neither the Harker patent nor the Curtis patent individually or in combination teach or even suggest all of the elements of claim 1, from which claims 2 – 4 depend. Without such a teaching or suggestion of all of the elements of claim 1, *prima facie* obviousness of claim 1, and therefore claims 2 – 4, cannot be established.

Turning now to claim 2, the Examiner's rejection of claim 2 is also traversed on the grounds that the cited references do not teach or suggest all of the elements of claim 2, and therefore, *prima facie* obviousness of claim 2 cannot be established. Claim 2 recites the limitation that the transfer pump further comprises "an exclusionary plate disposed *within* said volute chamber." (Emphasis added.) In the Harker patent at column 2, lines 42 – 43, and with reference to Figure 1, there is disclosed, "An oil reservoir is provided by the chamber 20 which is closed off by wick closure plate 21 and seal ring 22." While wick closure plate 21 may be read as an exclusionary plate, what is clear is that the wick closure plate is for retaining lubricating oil, and is not located in the volute chamber of the pump, as recited in the applicant's claim 2. The wick closure plate 21 cannot be construed as being in the volute chamber where the liquid being pumped is moved by the impeller. To the contrary, the wick closure plate 21 is isolated from the pump volute by the cover plate 101, and the various sealing components 110, 117, and 118. Additionally, at column 3, lines 7 – 8,

Harker discloses that copper shaft sleeve 111 is provided “to protect shaft 105 from corrosion”, i.e. corrosion that would be caused by the liquid being pumped. The copper shaft sleeve terminates adjacent to where the shaft 105 passes through the wick closure plate 21, and provides no protection to that portion of the shaft 105. It is therefore clear that the wick closure plate is never intended to be wetted by the liquid being pumped, and therefore cannot be considered as being in the pump volute as recited in the applicant’s claim 2.

Thus it is respectfully submitted that nowhere in the Harker reference, U.S. patent 4,569,638 or the Curtis reference, U.S. patent 2,312,525, is there shown or suggested a pump including either the limitation of a unitary housing, a motor disposed within a first portion of the housing, and a pump cavity formed in a second portion of the housing, or an exclusionary plate disposed within the volute chamber of the pump. The Examiner has not met the requirements to make a *prima facie* rejection of claim 2 as being obvious under 35 USC 103(a), since all of the limitations of the claims are not taught. It is respectfully submitted that claim 2 is therefore allowable.

Turning now to claim 3, the Examiner’s rejection of claim 3 is also traversed on the grounds that the cited references do not teach or suggest the additional limitations recited in claim 3, and therefore, *prima facie* obviousness of claim 3 cannot be established. Claim 3, which has been amended to address the Examiner’s rejection under 35 USC 112 as described previously herein, recites the limitations beyond claim 2 that the transfer pump further comprises “an annular region formed in said housing within said pump cavity, said annular

region comprising a counterbore within which is disposed a seal, and enclosing a seal flood region.” Nowhere in either the Harker or the Curtis patent is there shown or suggested an annular region of the housing, i.e. an annularly shaped portion of the solid housing that encloses an open space through which flows liquid to flood the seal, as recited in the applicant’s specification and in claim 3.

It is respectfully submitted that claim 3 as amended is therefore allowable, by virtue of the foregoing argument, as well as simply by its dependence upon claims 1 and 2, which are allowable.

Turning now to claim 4, the Examiner’s rejection of claim 4 is also traversed on the grounds that the cited references do not teach or suggest the additional limitations recited in claim 4, and therefore, *prima facie* obviousness of claim 4 cannot be established. Claim 4, which has been amended to address the Examiner’s rejection under 35 USC 112 as described previously herein, recites the limitations beyond claim 3, “wherein said annular region formed in said housing has an upper passageway between said pump cavity and said seal flood region and a lower passageway between said pump cavity and said seal flood region.” Since nowhere in either the Harker or the Curtis patent is there shown or suggested an annular region of the housing enclosing a seal flood region, there is also not shown or suggested upper and lower passageways between the pump cavity and the seal flood region.

It is respectfully submitted that claim 4 as amended is therefore allowable, by virtue of the foregoing argument, as well as simply by its dependence upon claims 1, 2, and 3, which are allowable.

The Examiner has rejected claim 15 under 35 USC 103(a), as being unpatentable over United States patent 2,312,525 of Curtis in view of United States patent 5,248,238 of Ishida. In the previously presented arguments traversing the Examiner's rejection of claim 1 under 35 USC 102(b) as being anticipated by United States patent 2,312,525 of Curtis, it was established that the Curtis patent does not teach a pump comprised of a unitary housing. The patent of Ishida also does not teach a unitary housing, but rather a first housing 14 "formed integrally with motor 10" and a second housing shown in Figure 1 enclosing the motor 10. The second housing is not numbered, but is cross-hatched differently than housing 14 and is clearly a separate part. Thus nowhere in either the Curtis or the Ishida patent is there shown or suggested a unitary housing as recited in claim 1, upon which claim 15 depends. The Examiner has not met the requirements to make a *prima facie* rejection of claim 15 as being obvious under 35 USC 103(a), since all of the limitations of the claim are not taught. It is respectfully submitted that claim 15 is therefore allowable.

The Examiner has rejected claim 28 under 35 USC 103(a), as being unpatentable over United States patent 6,464,471 of Mathis et al. or United States patent 5,375,651 of Colwell in view of United States patent 5,248,238 of Ishida. In the previously presented arguments traversing the Examiner's rejection of claims 16 and 29 under 35 USC 102(b) as being anticipated by United States patent 6,464,471 of Mathis et al. or United States patent 5,375,651

of Colwell, it was established that neither of these patents teach a pump comprised of a unitary housing. The patent of Ishida also does not teach a unitary housing, as established in the immediately preceding argument regarding claim 15. Thus nowhere in either the Mathis patent, or the Colwell patent, or the Ishida patent is there shown or suggested a unitary housing as recited in claim 1, upon which claim 28 depends. The Examiner has not met the requirements to make a *prima facie* rejection of claim 28 as being obvious under 35 USC 103(a), since all of the limitations of the claim are not taught. It is respectfully submitted that claim 28 is therefore allowable.

The Examiner has rejected claims 44 and 46 under 35 USC 103(a), as being unpatentable over United States patent 6,464,471 of Mathis et al. or United States patent 5,375,651 of Colwell in view of United States patent 4,162,419 of DeAngelis. In the previously presented arguments traversing the Examiner's rejection of claims 16 and 29 under 35 USC 102(b) as being anticipated by United States patent 6,464,471 of Mathis et al. or United States patent 5,375,651 of Colwell, it was established that neither of these patents teach a pump comprised of a unitary housing. The patent of DeAngelis is for an alternator and not a pump, and hence also does not teach a unitary housing including a pump cavity. Thus nowhere in either the Mathis patent, or the Colwell patent, or the DeAngelis patent is there shown or suggested a unitary housing as recited in claim 1, upon which claims 44 and 46 depend. The Examiner has not met the requirements to make a *prima facie* rejection of claims 44 and 46 as being

obvious under 35 USC 103(a), since all of the limitations of the claims are not taught. It is respectfully submitted that claims 44 and 46 are therefore allowable.

The Examiner has objected to claim 5, indicating that claim 5 are dependent upon a rejected base claim, but would be allowable if rewritten to overcome the rejection under 35 USC 112, and also rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With regard to the rejection under 35 USC 112, the applicant has amended claims 3 and 4, upon which claim 5 depends, to address this rejection, as described on page 20 of this communication. Subsequently, claim 5 has been amended, incorporating the limitations of claims 1 – 4 upon which claim 5 depends to address the Examiner's rejection. The amendments to claim 5 include the language of amended claims 3 and 4, thereby addressing the rejection of claim 5 under 35 USC 112. More specifically, with regard to amended claim 5, the limitations of original claim 1 are in paragraphs a – f; the limitation of original claim 2 is in paragraph g; the limitations of amended claims 3 and 4 are in paragraph h; and the limitations of claim 5 have been added to paragraph d.

It is respectfully submitted that the Examiner's objection and rejection of claim 5 has been obviated, and that claim 5 is now allowable.

By the instant amendment, the applicant has amended his case, thereby placing claims 1 – 5, 15, 16, 23, 24, 28, 29, 38, 39, and 44 – 46 in allowable

form. The applicant has further amended the specification and submitted formal drawings in order to obviate the Examiner's objections thereto and to correct additional minor errors therein. It is respectfully submitted that with the instant amendment, the applicant's case is now allowable, and allowance thereof is respectfully requested.

The applicant has also included a Petition for an Extension of Time for a period of 1 month, and will pay the fee in the amount of \$60.00 (small entity) when this amendment is filed via EFS-Web. Additionally, a fee of \$105.00 is believed to be due for amendment to claim 5, which put claim 5 in independent form, thereby resulting in four independent claims for this case. The applicant's agent, John M. Hammond, anticipates that this fee will be also be paid online via EFS-Web at the time of filing this Amendment and Response. If any problem is encountered in the electronic payment of these fees, the applicant's agent will take action as required to provide prompt payment of the fees via other means, such as by filing a credit card payment form, or by mailing a check in the amount of the fees with a Certificate of Mailing on the same day as the filing of this Amendment.

If for any reason the Examiner believes that a telephone conference might facilitate the prosecution of this case, he is respectfully requested to call Applicant's agent, John M. Hammond.

Respectfully submitted,

/John M. Hammond/
John M. Hammond
Registration No. 52,986
Agent for Applicant(s)
Patent Innovations LLC
150 Lucius Gordon Drive, Suite 205
West Henrietta, New York 14586
(585) 346-3783
jmhammond@patent-innovations.com